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ABSTRACT

Forty-four counties in Florida and 23 in Oregon with 1966 populations of less than 50,000 were selected for a study of the adequacy of public health services in rural areas. The counties were ranked on the following need variables: number of children under 5 years, persons over 65 years, Negroes, and families with incomes under $3,000. The seven performance items which were identified were (1) total expenditures for public health, (2) the number of nurses, (3) tuberculosis tests and X-rays, (4) antepartum and postpartum nursing visits, (5) nursing visits to children under 5 years, (6) diabetes nursing visits, and (7) cardiovascular nursing visits. Rank order correlations were calculated to determine the degree to which services associated with expected need for medical treatment and care. There was a high relationship between all items in need-for-services category and the performance variables, with the exception of cardiovascular nursing visits in Florida counties. This lack of correlation may be explained partially by the existence of a private organization which provides a cardiovascular visiting nurses service. A table of the rank order correlation data and a bibliography are appended. (BC)

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PUBLIC HEALTH SERVICES IN SIXTY-SEVEN RURAL COUNTIES: ARE THEY MEETING THE COUNTY'S MEDICAL NEEDS*

by

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"A time-honored and repeatedly stated principle in the health field is that those who need care and ask for it should receive it whether or not they can afford to pay for it." (2, p. 150) This paper is a report on a preliminary test of the adequacy of public health services in rural areas, using data from 67 rural counties in Oregon and Florida.

There are two seperate but related aspects of this conceptual notion of need. First, a determination of the status of the health of the people in a given area, and second an evaluation of what is being done about the existing situation. To do justice to the ideas presented in my opening quotation, the need for health services must be determined, and then an assessment made as to whether those in need are receiving care regardless of their ability to pay.

A community's total health needs may be furnished by either the public or private sector. In practice there is considerable overlap between public and private services. However, a sizeable number of persons are being excluded from both. The proper division of responsibilities between the public and private sectors is not considered here. The primary consideration is that all residents of the community have access to medical services. It is assumed that the public sector will have to absorb those health services which cannot be or are not provided by the private sector.

There are five broad categories of persons cited in public health studies as most in need of health services: rural residents, the poor, Negroes, children, and the aged. These categories are, obviously, not mutually exclusive. Viewing those in need of medical services from a geographical perspective, it has been shown that rural residents are more disadvantaged than people in urban areas. From the various National Health Surveys and other independent research projects we know that rural residents have access to fewer general practitioners, specialists (of all types), dentists, nurses, and hospital beds (15, 16, 18, 22, 27). In short, there are fewer facilities and professional personnel in rural areas than in the more populated places. On the other hand rural people have more disability days per person per year (28b, 28j), a greater incidence of acute conditions, more days of restricted activity due to illness, and more days of bed disability than their urban neighbors (2, p. 55, 7, 25, 28h, 28k, 281). These survey results indicate that rural residents need more medical care, but have fewer health resources at their disposal.

*This paper expresses the views of the author, not necessarily those of the Department of Agriculture.

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Looking at the broad area of people needing medical services from another direction one author says: "Identifying the low-income group is tantamount to identifying a high probability of medical need as shown by various indexes of prevalence and severity of disabling illness." (19, p. 517) Leaving little room for doubt the surveys "confirm clearly and in quantitative terms the generally accepted idea that there is a positive relation between poor health and low income." (16, p. 363) There can also be no doubt about the existence and depth of poverty in rural areas (5, 6, 24). Health-wise, wherever they are located, the poor have more of everything that is bad and less of everything that is good (1, 2, 14, 19, 26, 27, 28a, 28c, 28f, 28g). A high percentage of low income persons, then, indicates an acute need for health services.

A third perspective from which it is possible to view those persons in need of medical services is that of race. Since 32.1 percent of the U.S. Negro population live in rural areas (9), and median family income for Negroes in 1967 was $4,674 (compared to $7,792 for white families) (11), Negroes are a subgroup of both rural and low income persons. However, due to the special circumstances and specific problems inherent in being a Black American, Negroes can be considered a distinct group for the purposes of this analysis (17). Negroes have a shorter life expectancy, higher infant mortality rate, four times as great a maternal mortality rate, and a higher death rate from infectious diseases than whites (8, 14, 27). In any geographical area, a high proportion of Negroes indicates a definite need for medical services.

Approached from the direction of age two final, and much more obvious, groups can be identified. Research results show that children under 5 years (2, 23, 26, 28d, 29), and those persons 65 years of age or older (13, 28e), are quite likely to have considerable need of medical services.

Schematically these five groups and subgroups can be thought of as overlapping circles where it is possible for all groups to exist independently or in combination with one or all other groups (except, of course, the impossibility of being aged and a child at the same time).

The first of these five groups, rural people, was used to define the universe of this study. The other four groups were used as independent variables in the analysis. Due to the availability of unusually detailed and comprehensive State health reports, Oregon (21) and Florida (4) were chosen for initial analysis. From these two States all counties (Florida=44, Oregon=23) with a 1966 estimated population of less than 50,000 were selected for study. The counties were ranked on the four need variables:

Number of families under $3,000
Number of children under 5 years
Number of persons over 65 years
Number of Negroes

Previous results from a factor analysis of data on public health services in Florida and Oregon counties revealed seven performance variables, which seemed

statistically more important than a number of other variables. These seven performance items were used in this study as dependent variables; they are:

Total expenditure for public health
Number of Nurses
Number of tuberculosis tests and X-rays
Number of antepartum and postpartum nursing visits
Number of nursing visits to children under 5 years
Number of diabetes nursing visits
Number of cardio-vascular nursing visits

Rank order correlations were calculated to determine the degree to which services associated with expected need for medical treatment and care. The entire matrix of these correlations is presented in Table I.

Table I shows high relationships between almost all items in the need for services category and the seven performance variables. The exception to this rule is the lack of correlation for cardio-vascular nursing visits in Florida counties. This finding may partially be explained by the existence in most Florida counties of a visiting nurse service. There may be some special arrangement with this private organization to provide nursing visits for this particular illness, thereby releasing the county unit from a full responsibility for cardio-vascular nursing vists. The correlations in Table I also strongly suggest that performance is related to county population. The question then becomes: What relationships exist when the population factor is held constant?

In order to answer this question, a set of partial rank order correlations, with population held constant, were prepared (Table II). In general, it seems that higher service levels were strongly associated with poverty in Oregon; in Florida total expenditures showed a significant negative relationship with this variable. In Florida (but not in Oregon) larger numbers of children were associated with higher levels of services to children. There was some evidence that increased number of aged were associated with a higher level of general public health services in Oregon, but in neither State did increased number of aged show a significant relationship with any of the specific services studied. Increased numbers of Negroes appear to lead to more emphasis on services to children in Florida.

Does this analysis mean that medical needs are being met in these counties? Emphatically; this analysis does not. It shows only that in one of two States the direction of services is in positive direction with relationship to certain need categories of people. Whether the services provided are of sufficient quality, scope and magnitude are subjects for further research and study.

Table I -- Rank Order Correlations of Public Health Variables for Florida and Oregon (1966-67) 1/

	1966 Pop.	#Under $3,000	# Under 5 years	# Over 65 year	# Of Negro	Expend	# Of Nurses	TBTest X-Rays	Ante-Post	Child 5 years	Dia-betes	Cardio vascul
1966:Fla Pop.:Ore												
#Under:Fla $3,000:Ore	.887 .753											
#Under:Fla 5years:Ore	.974 .983	.847 .734										
# Over:Fla 65year:Ore	.925 .951	.879 .835	.861 .925									
# of:Fla Negro:Ore	.802 .652	.742 .356	.842 .654	.671 .548								
Expend:Fla :Ore	.849 .821	.675 .839	.850 .785	.756 .858	663 .390							
# of:Fla Nurses:Ore	.744 .825	.662 .854	.749 .797	.672 .864	.544 .392	.885 .970						
TBTest:Fla X-Rays:Ore	.552 .570	.471 .669	.523 .608	.514 .620	.377 .323	.621 .721	.637 .733					
Ante-:Fla Post:Ore	.276 .656	.302 .504	.341 .670	.193 .576	.377 .404	.258 .612	.245 .654	.121 .376				
Child:Fla 5years:Ore	.388 .540	.433 .639	.454 .563	.238 .571	.496 .330	.381 .656	.362 .718	.205 .595	.750 .611			
Dia-:Fla betes:Ore	.455 .730	.442 .773	.442 .770	.380 .726	.431 .274	.519 .852	.661 .853	.542 .737	.141 .655	.263 .783		
Cardio:Fla vascul:Ore	-.028 .708	-.016 .784	.014 .701	-.010 .745	-.062 .326	.171 .877	.294 .872	.126 .795	.311 .570	.310 .627	.152 .871	

Number for Florida = 44; number for Oregon = 23

1/ Using the standard product moment correlation formula on the numerical value of each county's rank on the variable. For some comments on the appropriateness of using this method see: S. Labovite, "Some Observations on Measurement and Statistics," Social Forces 46:151-160 (December, 1967).

Table II -- Partial Rank Order Correlations of Public Health Variables for Florida and Oregon (1966-67) with the Effects of Population Controlled 2/

	# Under $3,000	# Under 5 years	# Over 65 year	# Of Negro
Expend:Fla :Ore	-.320** .588*	.193 -.210	-.146 .406**	-.056 -.335
# Of:Fla Nurses:Ore	.009 .628*	.164 -.126	-.063 .459**	-.130 -.338
TBTest:Fla X-Rays:Ore	-.049 .444**	-.079 .318	.010 .307	-.133 -.078
Ante-:Fla Post:Ore	.129 .020	.331** .182	-.171 -.132	.271 -.040
Child:Fla 5years:Ore	.290 .420**	.364** .208	-.345** .221	.336** -.034
Dia-:Fla betes:Ore	.094 .497**	-.005 .418**	-.121 .150	.124 -.390
Cardio:Fla vascul:Ore	.019 .540**	.181 .039	.042 .329	-.066 -.253

2/ Using the formula: $r_{12.3} = \frac{r_{12} - r_{13}r_{23}}{\sqrt{1 - r_{13}^2}\sqrt{1 - r_{23}^2}}$; where the third variable is always population.

* Indicates a significance level of 99 percent.
** Indicates a significance level of 95 percent.

REFERENCES

ABBREVIATIONS

A.J.P.H. = American Journal of Public Health
P.H.R. = Public Health Reports

1. Albert, J.J., et al, "A Month of Illness and Health Care Among Low-Income Families," P.H.R. 82:705-713 (August 1967).

2. Andersen, R. and O.W. Anderson, A Decade of Health Services (Chicago: University of Chicago Press, 1967).

3. Andersen, R.M. and R.L. R.L. Eichhorn, "Correlates of Labor Efficiency Among Older Farmers in Poor Health," Rural Sociology, 29: 181-193 (June 1964).

4. Annual Report, 1967 (Jacksonville: Florida State Board of Health, 1967).

5. Bird, A.R., "Poverty in Rural Areas of the U.S.," Department of Agriculture, Economic Research Service, 1964.

6. Bird, A.R. and J.L. McCoy, "White Americans in Rural Poverty," Department of Agriculture, Economic Research Service, 1967.

7. Bryan, A.H. and E.L. Anderson, "Dietary and Nutritional Problems of Crippled Children in Five Rural Counties of North Carolina," A.J.P.H. 55: 1545-1554 (October 1965).

8. Cornely, P.B., "Health Status of the Negro Today and in the Future," A.J.P.H. 58: 647-652 (April 1968).

9. Department of Commerce, Bureau of Census, Current Population Reports, Series P-20, Number 175.

10. Department of Commerce, Bureau of Census, Current Population Reports, Series P-25, Numbers 401 and 404.

11. Department of Commerce, Bureau of Census, Current Population Reports, Series-60, Number 59.

12. Ellenbogen, B.L. and G.D. Lowe, "Health Care 'Styles' in Rural and Urban Areas," Rural Sociology 33: 300-312 (September 1968).

13. Gilbert, A. and P.F. O'Rourke, "Effects of Rural Poverty on the Health of California's Farmworkers," P.H.R. 83: 827-838 (October 1968).

14. Hochstim, J.R., et al, "Poverty Area Under the Microscope," A.J.P.H. 58: 1815-1827 (October 1968).

15. Krakowski, M., M. Werboff and B. Hoffnar, "Availability and Use of Health Services -- Rural-Urban Comparison," Department of Agriculture, Economic Research Service, 1968.

16. Linder, F.E., "The Health of the American People," Scientific American (June, 1966), reprinted in Hearing before the Subcommittee on Executive Reorganization of the Committee on Governmental Operations, U.S. Senate, 90th Congress, April 22-25.

17. Meltsner, M., "Equality and Health," 115 University of Pennsylvania Law Review 22 (1966).

18. Mitchell, J.B. and G. Gibson, "Reorganization of Health Care for Rural Residents," Paper presented at joint session of Rural Sociological Society and American Sociological Association, Annual Meetings, Boston, Massachusetts, August 27, 1968.

19. Muller, C., "Income and the Receipt of Medical Care," A.J.P.H. 55: 510-521 (April 1965).

20. Naylor, A.F. and H.C. Myrianthopoulos, "The Relation of Ethnic and Socio-economic Factors to Human Birth-Wieght," Annals of Human Genetics 31: 71-83 (1967).

21. Oregon State Board of Health, "Tabulation of Local Health Services in Oregon, July 1, 1966 - June 30, 1967," State Board of Health, Local Health Services Division, 1967.

22. Pennell, M.Y., and K.I. Baker, Health Manpower Source Book: Location of Manpower in 8 Occupations (Washington, D.C.: Department of Health, Education, and Welfare, Public Health Service, 1965).

23. Peters, A.D. and C.L. Chase, "Patterns of Health Care in Infancy in a Rural Southern County," A.J.P.H. 57: 409-423 (March 1967).

24. Rural Poverty in the United States, A Report by the President's National Advisory Commission on Rural Poverty (Washington, D.C.: 1968).

25. Straus, R., "Poverty as an Obstacle to Health Progress in Our Rural Areas," A.J.P.H. 55: 1772-1779 (November 1965).

26. Stockwell, E.G., "Socio-economic Status and Mortality in the United States," P.H.R. 76: 10181-1086 (December 1961).

27. Toward a Social Report (Washington, D.C.: Department of Health, Education, and Welfare 1969).

28. U.S. National Health Survey (Washington, D.C.: Department of Health, Education, and Welfare, Public Health Service)

a. "Preliminary Report on Volume of Dental Care, July-Sept., 1957"
b. "Selected Survey Topics, July 1957-June 1958"
c. "Limitation of Activity and Mobility Due to Chronic Conditions, July 1957-June 1958"
d. "Children and Youth: Selected Health Characteristics, July 1957-June 1958"
e. "Older Persons: Selected Health Characteristics, July 1957-June 1959"
f. "Dental Care: Volume of Visits, July 1957-June 1959"
g. "Volume of Physicial Visits, July 1957-June 1959"
h. "Acute Conditions: Geographic Distribution, July 1958-June 1959"
i. "Persons Receiving Care at Home, July 1958-June 1959"
j. "Disability Days, July 1959-June 1960"
k. "Selected Health Characteristics by Area: Geographical Regions and Urban-Rural Residence, July 1957-June 1959"
l. "Acute Conditions: Geographic Distribution, July 1960-June 1961"
m. "Volume of X-ray Visits, July 1960-June 1961"

29.Yerby, A.S., "Problems of Medical Care for Indigent Populations," A.J.P.H. 55: 1212-1216 (August, 1965).